January 2013, Issue 17

Army Industrial Hygiene News and Regulatory Summary

Hazardous Substances

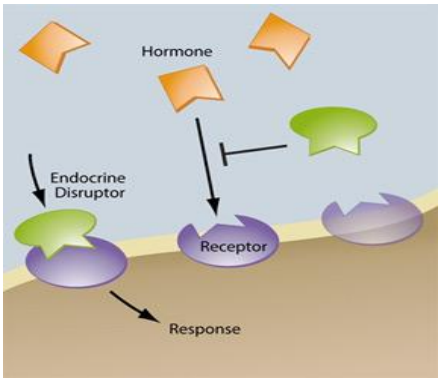
Is Your Job Making You Sick?

A new study, funded by the Canadian Cancer Society, will examine the human and economic impact of workplace exposure to 44 known or suspected carcinogens and their links to 27 types of cancer. The study's main goals are to quantify - for the first time - how serious the problem is in Canada by estimating the number of new cancer cases and cancer deaths that can be attributed to workplace factors, and also to weigh the economic impact

Read more:
http://www.ishn.com/articles/94917-is-your-job-making-you-sick

Tiered Protocol for Detecting Endocrine Disruption

A team of experts in biology, chemistry, and toxicology has developed a protocol to help industrial scientists detect endocrine-disrupting tendencies early in the chemical development process. What sets the Tiered Protocol for Endocrine Disruption (TiPED) apart from the protocols typically used to assess product safety is its incorporation of what the authors believe to be the best assays for detecting effects on the endocrine system.



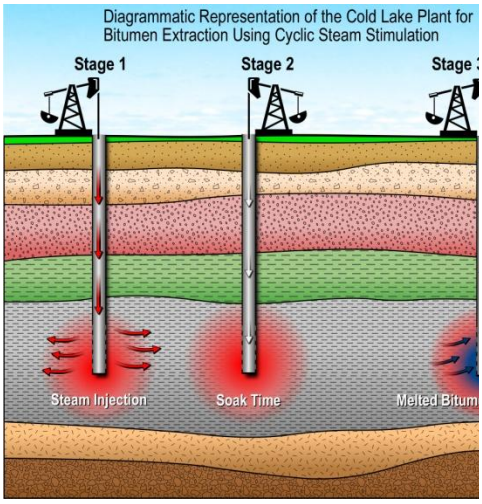
Read more:
http://ehp.niehs.nih.gov/2013/01/121-a16

Special Interest Articles:

DOEHRS Super Star

Contents:

Oil Sands Industry in Canada Tied to Higher Carcinogen Level



The development of Alberta's oil sands has increased levels of cancer-causing compounds in surrounding lakes well beyond natural levels, Canadian researchers reported in a study released on Monday. And they said the contamination covered a wider area than had previously been believed.

Read more:
http://www.nytimes.com/2013/01/13/world/americas/oil-sand-industry-in-canada-tied-to-higher-carcinogen-level.html?ref=health&_r=0

OSHA Sampling Results of Toxin Exposures at Sandy Cleanup Released

OSHA has released the initial results of the impact that Hurricane Sandy had on industrial hygiene in New York and New Jersey. These industrial hygiene samples measured reveal the possible or actual health hazard exposure that employees may face during Sandy cleanup.
The results of the sampling show that while some harmful contaminants – like asbestos, carbon monoxide, and silica – are present in cleanup areas, the levels do not exceed the OSHA Permissible Exposure Limits.

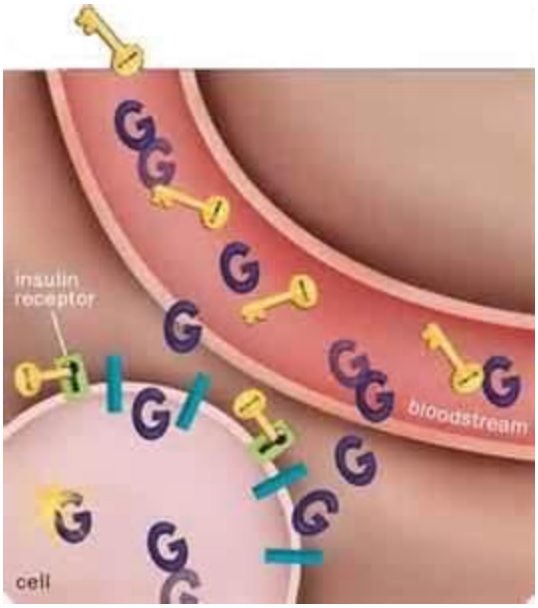
Read more: http://ohsonline.com/articles/2013/01/10/osha-sampling-results-of-toxin-exposure-at-sandy-cleanup-released.aspx?admgarea=news

Welding Processes and Fume Production

Unexplained variability in personal breathing zone (PBZ) data may not be the sole bane of an industrial hygienist's existence, but it ranks well above whatever is in second place. When faced with excessive dispersion in the data for a given similar exposure group (SEG), one naturally wonders whether the data represent more than one SEG. My review of welding fume data collected over decades by experienced IHs suggests that one major source of unexplained variability is failure to record the welding process in use during the task(s) monitored.

Read more: The Synergist, January 2013 (Available with AIHA membership)

PCBs and Diabetes: Pinning Down Mechanisms



Many factors are suspected in the global surge in type 2 diabetes, among them exposures to toxic chemicals including polychlorinated biphenyls (PCBs). To investigate the potential mechanisms of the type 2 diabetes/PCB connection, a team of investigators studied two coplanar PCBs, PCB-77 and PCB-126 [*EHP* 121(1):105–110; Baker et al.]. They found, via *in vitro* and *in vivo* studies with male mice, that exposure rapidly and significantly disrupted several important biological indicators.

PCBs are long-lasting toxicants that accumulate in fatty tissues and remain

prevalent in the bodies of people and wildlife around the world, despite a ban decades ago. Human exposure is primarily dietary or occupational.

Read more
http://ehp.niehs.nih.gov/2013/01/121-a32/

Monograph Highlights Opportunities to Improve Both Patient and Worker Health and Safety

A monograph published Nov. 19 by the Joint Commission, a nonprofit that accredits and certifies health care organizations, identifies potential opportunities for simultaneous improvement of worker safety and patient safety in the health care industry. The publication includes several case studies and concludes that opportunities for collaboration exist in the following areas: adverse event and hazard surveillance, reporting, analysis, and feedback; safety management systems; human factors and ergonomics; safer design of work processes and the built environment; and strategies to enhance communication and support staff engagement in improvement activities.

Read more: The Synergist, January 2013 (Available with AIHA membership)

Controlling Dust from Concrete Saw Cutting

Cutting concrete with gas-powered saws is ubiquitous in the construction industry and a source of exposure to respirable crystalline silica. Volunteers from the New England Laborers Training Center were recruited to participate in a field experiment examining dust reductions through the use of water, from a hose and from a sprayer, as a dust control. In four series of tests, reinforced concrete pipe was cut under both “dry” and “wet” control conditions. Overall, the geometric mean

respirable dust concentration for "dry" cutting (14.396 mg/m^3) exceeded both types of water-based controls by more than tenfold. Wet cutting reduced the respirable dust concentration by 85% compared with dry cutting when comparing tests paired by person and saw blade (n = 79 pairs).

Read more: Journal of Occupational and Environmental Hygiene Volume 10, Issue 2, 2013 (Available with AIHA membership)

Controlling Diesel Particulate: Techniques for Reducing Emissions and Protecting Workers

The first activity should be to establish whether exposures place employees at risk. Obviously, any legally binding workplace exposure standards should be followed where applicable, but many countries lack these standards. Strong evidence indicates that keeping employee exposures below 0.1 mg/m^3 elemental carbon (EC) significantly decreases the risk of adverse health effects. Consequently, the hygienist should conduct a comprehensive workplace assessment for DP using validated techniques, such as collection on a quartz filter using a DP sampler and analysis by NIOSH method 5040. A number of portable direct-reading instruments are available, and while they are quick and simple to use, care must be exercised to ensure they are free from interfering substances and appropriately calibrated.

Read more: The Synergist, January 2013 (Available with AIHA membership)

Radiation

Energy Department Announces Radioactive Waste Strategy

The U.S. has taken another step on a seemingly endless path to address the fate of some 68,000 metric tons of high-level radioactive waste currently stored all over the country at more than 100 operating nuclear power plants and other facilities.

On Jan. 11, the Department of Energy announced a nuclear waste strategy that for the first time includes selecting and constructing at least one temporary, centralized storage facility for spent nuclear fuel and other radioactive waste. The plan also includes selection and construction of at least one permanent geological repository.

The strategy, however, puts off the interim facility for a decade, and the repository would not be expected to be in operation until 2048—more than 100 years after the dawn of the nuclear age and 50 years after a congressionally mandated deadline by which the Yucca Mountain repository in Nevada was supposed to be in operation.

Read more:
http://cen.acs.org/articles/91/i3/Energy-Department-Announces-Radioactive-Waste.html

Helicopter Monitors Radiation Levels in Washington, D.C.

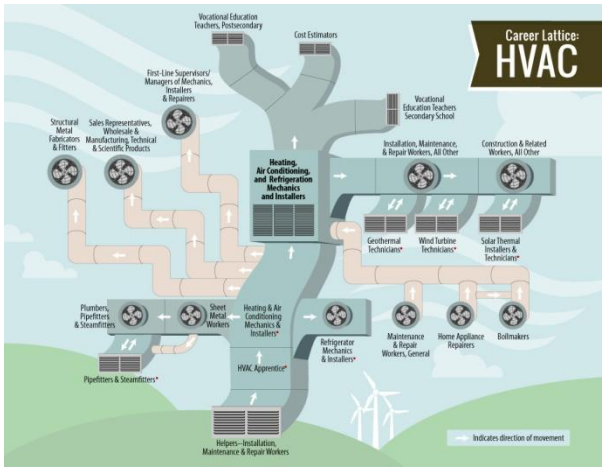
The National Nuclear Security Administration (NNSA) said it has been flying a helicopter over portions of Washington, D.C., since 27 December to measure naturally occurring radiation in the Washington, D.C., area. The surveillance flights will continue until 11 January.

The radiation assessment will cover approximately seventy square miles and NNSA will complete the assessment using a helicopter equipped with remote gamma radiation sensing technology. The helicopter is flying in a grid pattern over the areas, 150 feet or higher above the ground surface, at a speed of approximately 80 miles per hour. Flyovers occur only during daylight hours and it is estimated to take about two weeks to complete the assessment.

Read more:
http://www.homelandsecuritynewswire.com/dr20130108-helicopter-monitors-radiation-levels-in-washington-d-c

Ventilation

Tips for Designing Energy Efficient HVAC Systems



The pursuit of energy efficient buildings involves the integration of multiple strategies and systems. These systems include architectural enclosure, lighting, domestic water heating, vertical transportation and HVAC. For HVAC systems, the loads come primarily from five sources: the building envelope (heating and cooling), lighting (cooling), occupancy (cooling), equipment for programmed use (cooling) and ventilation (heating and cooling).

Ventilation load is a function of either the number of persons occupying the space or the mechanisms necessary to control contaminant concentration and introduction to the space. In most climates of the eastern and southwestern regions of the United States, minimizing outside airflow saves energy when outside air is either warm and humid or very cold. Control of ventilation rate determined by occupancy, referred to as demand-control ventilation, is a common energy conservation strategy, especially for spaces with intermittent dense occupancy. Procedures for implementing demand-control ventilation are detailed in ASHRAE Standard 62.1.

Read more:
http://www.facilitiesnet.com/hvac/article/Tips-For-Designing-Energy-Efficient-HVAC-Systems--13662

PPE

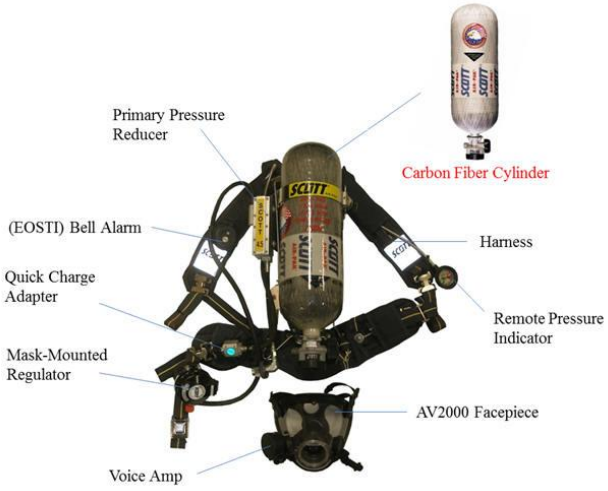
NIOSH Publishes SCBA Service-Life Indicator Final Rule

A final rule published Jan. 14 by NIOSH updates its respirator approval standards, 42 CFR 84.83, by requiring self-contained breathing apparatus (SCBA) manufacturers to set the service-life indicator to alarm when the breathing air supply is down to 25

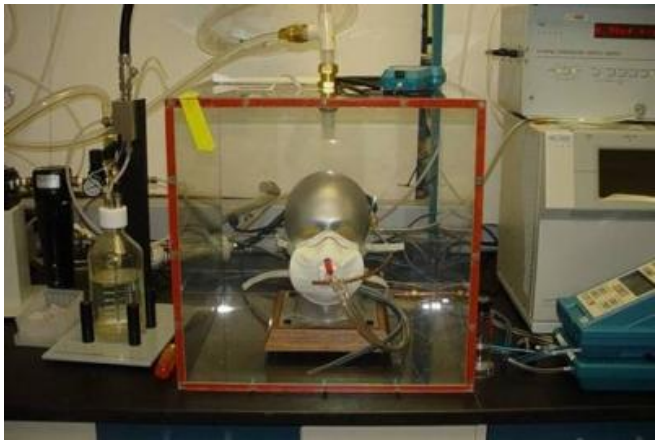
% of the unit's rated service time. The final rule allows manufacturers to set it at a higher point if they choose to or if based on the purchaser's use scenario.

A CDC agency, NIOSH proposed this change in June 2012. The current rule requires that SCBA service-life indicators alarm within the 20-25 % range; a representative of the Columbus, Ohio, Local 67 of the International Association of Fire Fighters requested in 2003 that it be amended, and stakeholders agreed the lower value should be eliminated, according to NIOSH.

Read more:
http://ohsonline.com/articles/2013/01/14/niosh-publishes-scba-final-rule.aspx?admgarea=news



IRSST Measures the Effectiveness of N95 Respirator Filters Against Nanoparticles



A new study developed a procedure that measures the effectiveness of N95 face-piece respirator filters for capturing nanoparticles and found that increasing the airflow rate decreased the efficiency of the NIOSH-approved respirator such that the respirator could lose its threshold efficiency of 95 %. In addition, researchers found that increasing relative humidity decreased the efficiency of N95 respirators, specifically for smaller particle sizes. The results were published by the Institut de recherché Robert-Sauvé en santé et en sécurité du travail (IRSST), a nonprofit scientific research organization in Quebec, Canada.

IRSST reports that inhalation is the most common route of exposure to nanoparticles in the workplace. The organization recommends that the new methodology be used to test N, R, and P respirators with 95, 99, and 99.97 % filter efficiency and that

testing be performed for both solid and liquid particles.

Read more: The Synergist, January 2013 (Available with AIHA membership)

Noise

Wireless Communication Boost Safety, Productivity

Clear communication is essential to maintaining a safe, productive, and effective workplace. Work in the industrial, manufacturing, utility, and construction industries often takes place in noisy, dangerous, highly dispersed environments. Workers must hear and be heard over high levels of background noise, regularly competing with equipment, heavy machinery, and lengthy distances between workers.

Read more:
http://ohsonline.com/articles/2013/01/01/wireless-communications.aspx?admgarea=ht.PPE

Hearing Loss Prevention Drugs Closer to Reality

About 26 million American adults have noise-induced hearing loss, according to the National Institute on Deafness and Other Communication Disorders. Prevention is key because damage to hearing-related hair cells in the inner ear by loud noise is irreversible. Though hearing aids can help amplify sound and implanted devices can restore some sensation of sound for those with more profound hearing loss, they do not restore normal hearing. Thus, researchers are trying to find drugs that prevent hearing damage in the first place.

Read more:
http://www.healthnewsdigest.com/news/hearing%20issues0/Hearing-Loss-Prevention-Drugs-Closer-to-Reality.shtml

Preventive Medicine

Hopkins Study Proves Hydrogen Peroxide Vaporizers Highly Effective

Infection control experts at The Johns Hopkins Hospital report their study of the use of hydrogen peroxide vaporizers shows the devices are highly effective at killing and preventing the spread of multi-drug-resistant bacteria. These robot-like devices first were used in Singapore hospitals during the 2002 outbreak of SARS (severe acute respiratory syndrome) and later were stocked by several U.S. government agencies in case of an anthrax attack, according to the researchers, whose study is published Jan. 1 in the journal *Clinical Infectious Diseases*

Read more:
http://ohsonline.com/articles/2013/01/02/hopkins-study-proves-hydrogen-peroxide-vaporizers-highly-effective.aspx?admgarea=news

JOEM Study Shows Health Promotion Cut Costs by 18 %

A study published in the January 2013 issue of the *Journal of Occupational and Environmental Medicine* found workplace health promotion programs can reduce average worker health costs by 18 %, and even more for older workers, the American College of Occupational and Environmental Medicine (ACOEM) announced Jan. 8.

Researchers combined data from two major studies to estimate savings from reductions in seven risk factors or medical conditions typically addressed by workplace wellness programs: physical inactivity, low fruit and vegetable intake, smoking, overweight/obesity, high blood pressure, high cholesterol, and alcohol abuse.

Read more:
http://ohsonline.com/articles/2013/01/09/joem-study-shows-health-promotion-cuts-costs-by-18-percent.aspx?admgarea=news

Chemical Tied to Intergenerational Obesity

Exposure in the womb to a chemical used in PVC and ship paint promotes obesity in mice. And the effect is long-lasting: The mice's grandchildren were also fat despite no exposure to the chemical.

The work shows that the effects of an obesogen — a chemical that encourages fat accumulation — can be passed on to future generations not exposed to the chemical, researchers report online January 15 in *Environmental Health Perspectives*.
The compound tributyltin is often added to PVC as a stabilizer and to marine paint as an antifouling agent.

These changes appear to be permanent. The children and grandchildren of these mice also had increased amounts of body and liver fat.

Read more:
http://www.sciencenews.org/view/generic/id/347610/description/News_in_Brief_Chemical_tied_to_intergenerational_obesity

USDA Rule Strengthens Livestock Disease Traceability

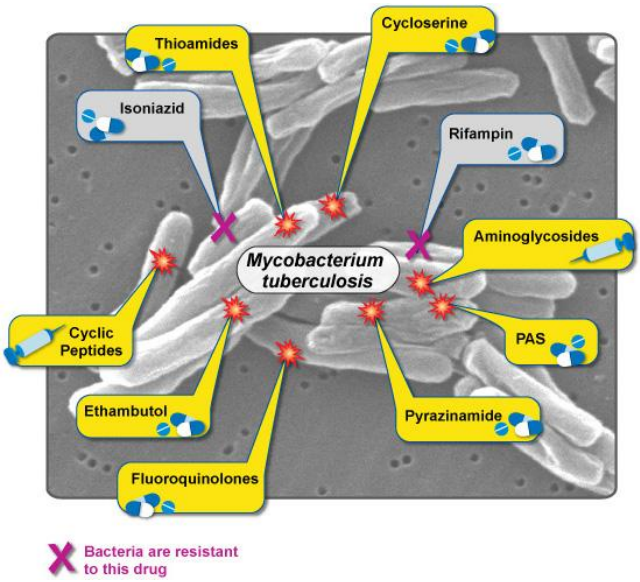
A final rule from the U.S. Department of Agriculture will made it easier to trace diseases such as brucellosis and avian influenza in livestock, according to the agency's recent news releases about it. The Animal and Plant Health Inspection Service, a USDA unit, announced the rule and said it will be published in the Federal Register in early January 2013.

Read more:
http://ohsonline.com/articles/2013/01/01/usda-rule-strengthens-livestock-disease-traceability.aspx?admgarea=news

FDA Approves New TB Drug

The U.S. Food and Drug Administration announced Dec. 31 it has approved Sirturo (bedaquiline) as part of combination therapy to treat adults with multi-drug resistant pulmonary tuberculosis when alternatives are not available.

TB is an infection caused by *Mycobacterium tuberculosis*; CDC reports nearly 9 million people around the world and 10,528 people in the United States became sick with TB during 2011. Multi-drug resistant TB occurs when *M. tuberculosis* becomes resistant to isonazid and rifampin, the drugs most commonly used to treat TB. Sirturo is the first drug approved to treat multi-drug resistant TB and works by inhibiting an enzyme needed by *M. tuberculosis* to replicate and spread throughout the body.



Read more:
http://ohsonline.com/articles/2012/12/31/fda-approves-drug.aspx?admgarea=news

Lead Detection in Food, Medicinal, and Ceremonial Items Using a Portable X-Ray Fluorescence (XRF) Instrument

The authors evaluated a Niton XLp303A X-ray fluorescence (XRF) instrument, used to identify lead hazards in housing, to determine its effectiveness to screen food, medicinal, and ceremonial items during lead poisoning investigations. Fifty-eight suspect exposure items were tested for lead by XRF and then sent to the laboratory for confirmation. A lead content cut-point of 10 parts per million (ppm; the lower level at which the XRF model could reliably determine the presence of lead) was used to evaluate the results. The Niton consistently identified the presence of lead spectra emissions and gave quantitative readings above 10 ppm for the nine samples with lead content that exceeded 10 ppm in laboratory testing. The authors' study suggests that the Niton XLp303A is an effective screening method for food and similar items with lead content a-10 ppm, provided the operator is trained to identify lead spectra. Rapid, on-site identification of lead exposure sources allows an investigator to inform the family of immediate steps they can take to decrease their child's lead exposure.

Read more: Environmental Health, Volume 75, No. 6 January/February 2013

Environmental Health

Black Carbon Causes Twice As Much Global Warming Than Previously Thought

Soot from burned wood and diesel exhausts may have twice the impact on global warming than previously thought, according to a new study published on Tuesday.

The "black carbon" is said to be the second most important man-made agent of climate change.

The findings, published in the Journal of Geophysical Research Atmospheres, suggest there may be untapped potential to curb global warming by reducing soot emissions. Huge quantities of man-made soot enter the atmosphere every year. Around 7.5m tonnes was released in 2000 alone, according to estimates. It has a greenhouse effect two-thirds that of carbon dioxide, and greater than methane.
The biggest source of soot emissions is the burning of forest and savannah grasslands. But diesel engines account for about 70% of emissions from Europe, North America and Latin America.

Read more:
http://www.guardian.co.uk/environment/2013/jan/15/black-carbon-twice-global-warming

Fortified by Global Warming, Deadly Fungus Poisons Corn Crops, Causes Cancer

Last year's drought increased the spread of a carcinogenic mold called aspergillus (*Aspergillus flavus*), a fungal pathogen that poisons cattle, kills pets and has infected the 2012 corn crop, rendering significant portions of the harvest unfit for consumption.

Whereas the deadly organism mainly affects countries like China and developing African nations, many U.S. states have experienced an increase in corn contamination since 2011. Farmers are likely to see more of the carcinogen as temperatures continue to rise and droughts become more frequent.

A. flavus releases toxic spores that can be fatal when ingested, prompting symptoms that include jaundice, liver cancer and internal bleeding. The poison is so deadly that in 1995 Iraqi dictator Saddam Hussein

confessed to weaponizing the mold spores for use in biological warfare.

Read more: http://www.scientificamerican.com/article.cfm?id=deadly-fungus-poisons-corn-crops

EPA Finalizes Boiler Rule

The EPA finalized rules aimed at reducing toxic air pollution from industrial boilers and incinerators while offering industry more flexibility and lower costs to comply with the new standards.

Obama administration officials said most of the 1.5 million boilers nationwide are not covered by the regulation since they are too small or emit too little pollution to warrant controls.

The changes will require pollution controls at about 2,300 of the largest and most polluting boilers nationwide, including those found at refineries and chemical plants. Those boilers will have three years to comply and could be granted a fourth year if they need to install pollution controls.

Read more: http://news.yahoo.com/epa-finalizes-boiler-rule-reduce-221519104.html

Ergonomics

Sharp Spike in Computer-Related Injuries Predicted for Medical Workers, Find Studies

As U.S. health care goes high tech, spurred by $20 billion in federal stimulus incentives, the widespread adoption of electronic medical records and related digital technologies is predicted to reduce errors and lower costs -- but it is also likely to significantly boost musculoskeletal injuries among doctors and nurses, concludes a Cornell

University ergonomics professor in two new papers.

Read more: http://www.sciencedaily.com/releases/2012/12/121203121706.htm

Validity and Reliability of Multiparameter Physiological easurements Recorded by the Equivital Lifemonitor During Activities of Various Intensities

The Equivital LifeMonitor EQ02 is a multiparameter body-worn system capable of logging and transmitting physiological data describing a wearer's cardiorespiratory and thermal status. A number of vital signs can be acquired by the system, including electrocardiography, respiratory inductance plethysmography, posture/activity, multipoint skin temperature, and core temperature. The validity and reliability of the multiparameter physiological data recorded by the EQ02 were assessed. Participants performed resting, low-, and moderate intensity activities and wore the EQ02 and other calibrated laboratory physiological monitoring devices simultaneously. Heart rate, respiratory rate, multipoint skin temperature, and core temperature recorded by the EQ02 were compared with measurements recorded by standard devices. Results show that the validity error scores for HR and RR for all three activities were not significantly different from zero, and the CV, 95% LOA, and r were all clinically accepted.

Read more: Journal of Occupational and Environmental Hygiene Volume 10, Issue 2, 2013 (Available with AIHA membership)

Safety

Tips for Strengthening Safety Committees

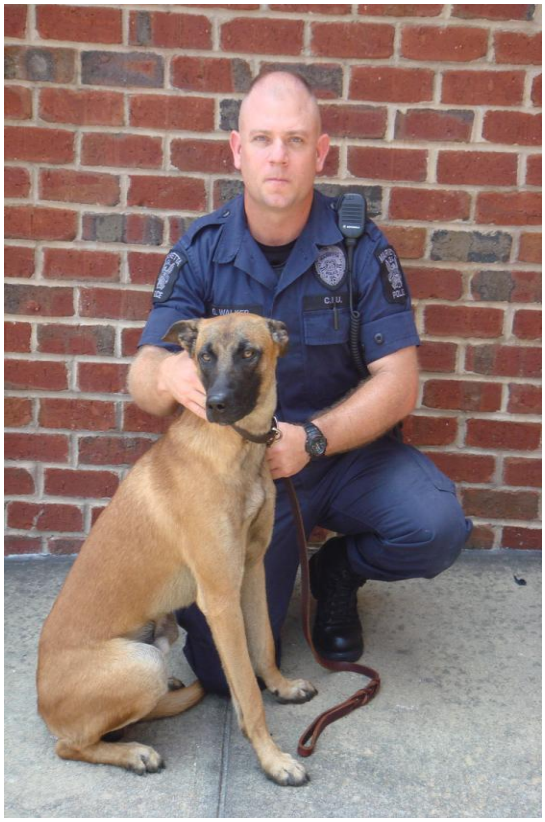
Dedicated and efficient safety committees can lead to increased safety at the workplace. In fact, safety committees are so beneficial, that some U.S. states require

them. Here are the top five ways discussed in this article to strengthen any safety committee.

1) Right size
2) Executive buy-in
3) Meeting structure
4) Information management
5) Hazard identification and evaluation

Read more: Professional Safety, December 2012 Volume 57, No 12 (Available with ASSE membership)

Shifting the Safety Balance for Overnight Workers



An international team of sleep researchers has developed the world's first screening tool to help reduce workplace accidents and illnesses, including cardiovascular disease and cancer, caused by shift work.

Published in the journal *Sleep*, the new tool will enable health professionals and industry to better understand individual vulnerability to the health and safety impacts of shift work.
This screening questionnaire for a condition known as shift work disorder (SWD) has been developed by researchers

Read more:
http://www.sciencedaily.com/releases/2012/12/121203093802.htm

Is It OK Just To Provide PPE, Or Do You Have To Make 'Em Wear It?

Interpretation of a safety regulation sometimes turns on the meaning of one word. That was the case regarding an OSHA fine for lack of PPE. Now a review panel has taken another look at the matter.

During the inspection, the OSHA inspector saw an employee using a jackhammer to chip away concrete while his supervisor stood nearby. Pieces of concrete were flying into the air. Neither the employee nor the supervisors were wearing eye protection.

Two pairs of protective eye wear were on site. The employees told the OSHA inspector they knew they could have used the eye protection if they felt they needed it.

OSHA issued a serious violation to because the two employees weren't wearing eye protection while operating a jackhammer.

OSHA said the employer violated construction standard 1926.102(a)(1) which says the employer should "provide" eye protection in such a situation.

Read more:
http://www.safetynewsalert.com/is-it-ok-just-to-provide-ppe-or-do-you-have-to-make-em-wear-it/

OSHA Updates Guidance on Hazardous Chemical Exposures in Labs

OSHA is issuing a technical amendment to the non-mandatory appendix in its standard on occupational exposure to hazardous chemicals in laboratories, 1910.1450, which is known as the OSHA Laboratory Standard. Published Jan. 22 in the *Federal Register*, the amendment takes effect upon publication. It was made in order to include contents from a 2011 National Academy of Sciences publication.

Read more:
http://ohsonline.com/articles/2013/01/21/osha-updates-guidance-on-hazardous-chemical-exposures-in-labs.aspx?admgarea=news

Neutralizing the Effects of Lethal Chemical Agents

Organophosphorus agents (OPs) are used both in farm pesticides, and by terrorists and rogue states. About 200,000 people die each year across the world from organophosphorus agents (OP) poisoning, through occupational exposure, unintentional use, and misuse, mostly in developing countries like India, Pakistan, and Sri Lanka and through deliberate terrorist activities. OPs include compounds like Tabun, which was developed in 1936 by German scientists during the Second World War, Sarin, Soman, Cyclosarin, VX, and VR. Researchers develop an enzyme treatment which could neutralize the effects of OPs. An enzyme treatment which could neutralize the effects of lethal chemicals responsible for the deaths of hundreds of thousands of people across the world has been developed by experts at the University of Sheffield.

Read more:
http://www.homelandsecuritynewswire.com/dr20130113-neutralizing-the-effects-of-lethal-chemical-agents

Jobs Identified That Are Linked To Greater Risk of Asthma in Adults

Almost 10,000 people born in Britain in 1958 were tracked for 15 years and researchers were able to identify which jobs were linked with an increased risk of developing asthma as an adult.

It was found that the workplace had a greater influence on adult-onset asthma than smoking, accounting for one in six cases of the disease compared with one in nine for smoking. Of the 9,488 people

studied, nine per cent had developed asthma by the age of 42, not including those who had it as children.

The team from Imperial College London identified 18 jobs that were linked to an increased risk of asthma. Four of the 18 were cleaning jobs and a further three of which were likely to involve exposure to cleaning products.

Read more:
http://www.telegraph.co.uk/health/healthnews/9815320/Jobs-identified-that-are-linked-to-greater-risk-of-asthma-in-adults.html

Decompression Sickness and Tunnel Workers

Underwater construction and tunnel operations use compressed air to stabilize soil and keep out water. In these conditions, workers are at risk of decompression sickness (DCS).

DCS can be treated or prevented using a decompression chamber guided by decompression tables. The tables direct the time and pressure intervals needed to ensure workers are brought back to surface pressure safely.
This webpage provides information about decompression sickness and the NIOSH decompression tables. These tables are accessible for use by workers, employers, and safety and health professionals.

Read more:
http://www.cdc.gov/niosh/topics/decompression/default.html

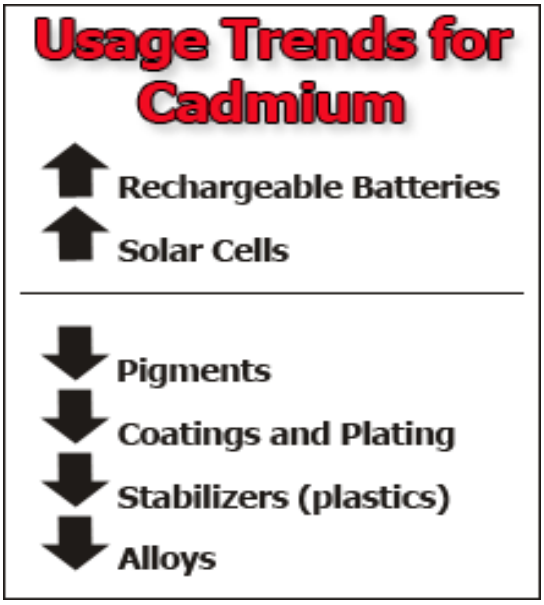
OSHA Cites US Postal Service for Worker's Heat-Related Death

OSHA has cited the U.S. Postal Service Truman Station in Independence, Mo., with a willful violation for failing to protect employees working in excessive heat. OSHA initiated an inspection in July after a mail carrier developed heat-related illness symptoms, collapsed while working his route and was taken to the hospital where he died as a result of his exposure to excessive heat.

Read more:
http://www.osha.gov/as/opa/quicktakes/qt12172012.html#18

New Interactive Online Tool Helps Employers Assess Workers' Exposure to Cadmium

The Cadmium Biological Monitoring Advisor, a new online tool from OSHA, analyzes biological monitoring results provided by the user. These data, along with a series of answers to questions generated by the cadmium advisor, are used to determine the biological monitoring and medical surveillance requirements that must be met under the general industry cadmium standard (29 CFR 1910.1027). These requirements include the frequency of additional monitoring and other mandatory components of the employer's medical surveillance program.



Read more:
http://www.osha.gov/as/opa/quicktakes/qt12172012.html#14

Emergency Preparedness & Response

New, Quick Way to ID People Exposed To Dirty Bomb, Radioactive Radiation

Research conducted by scientists from the Berkeley Lab could lead to a blood test that detects if a person has been exposed to radiation, measures their dose, and separates people suffering from inflammation injuries — all in a matter of hours.

There is a reason emergency personnel train for the aftermath of a dirty bomb or an explosion at a nuclear power plant. They will be faced with a deluge of urgent tasks, such as identifying who has been irradiated, who has an injury-induced infection, and who is suffering from both. Unfortunately, there is no quick way to screen for people exposed to dangerous levels of radiation.

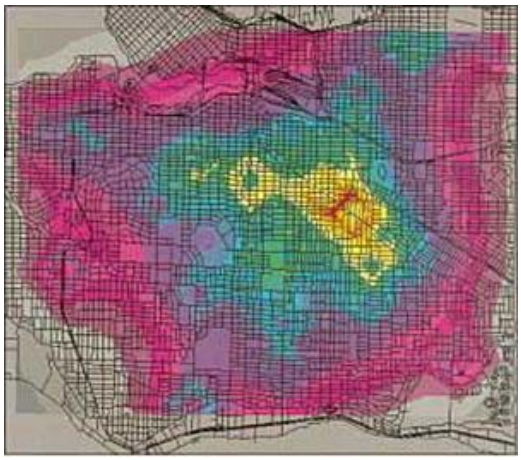
There also is no quick way to distinguish between people suffering from radiation exposure versus an infection due to an injury or chemical exposure.

Read more:
http://www.homelandsecuritynewswire.com/dr20121218-new-quick-way-to-id-people-exposed-to-dirty-bomb-radioactive-radiation

Technique Used To Nab Serial Killers Helps In Controlling Pests and Disease and In Counter-Terrorism

A technique designed to help criminologists catch serial killers is being used by scientists to locate sources of disease, control pests, and study animal behavior; locating a serial killer's home is similar to finding the nests of animals or centers of disease outbreaks; ecological approaches have applications in counter-terrorism work, as terrorist cells tend to have more than one anchor point within the area in which they operate, exactly so they can avoid detection

Read more:
http://www.homelandsecuritynewswire.com/dr20121212-technique-used-to-nab-serial-killers-helps-in-controlling-pests-and-disease-and-in-counterterrorism



Deployment Health

Udall-Corker Burn Pit Registry Signed Into Law

U.S. Sens. Tom Udall (D-N.M.) and Bob Corker (R-Tenn.) announced that President Obama signed their bill to establish a registry of service members and veterans who were exposed to toxic chemicals and fumes from open-air burn pits in Iraq and Afghanistan into law.

Read more:
http://politicalnews.me/?id=20309&keys=BURN-PIT-VETERANS-ILLNESSES

Advances in Night Vision from Cow Country

Breakthroughs in flexible semiconductors may lead to better and easier night vision for the military and law enforcement, thanks to the University of Wisconsin.

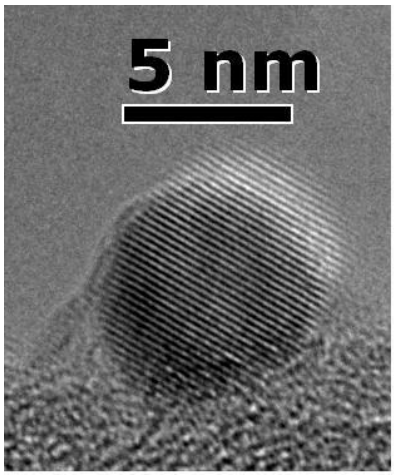
To build goggles with more accurate night vision for pilots and soldiers, the DOD and

USAF Office of Scientific Research worked with University of Wisconsin-Madison. The Air Force Office of Scientific Research gave the school $750,000 in funding to support the first project: a new curved surface for night-vision goggles.

Read more: http://www.foxnews.com/tech/2013/01/10/advances-in-night-vision-from-cow-country/#ixzz2IKmht7eY

Nanotechnology

Generating Nano-Aerosols from TiO_2 (5 nm) Nanoparticles: Application to Toxicological Studies



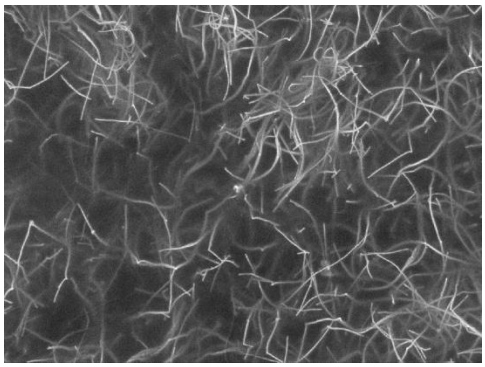
Agglomeration of nanoparticles (NP) is a key factor in the generation of aerosols from nano-powders and may represent an important parameter to consider in toxicological studies. For this reason, the characterization of NP aerosols (e.g., concentration, size, and structure of agglomerates) is a critical step in the determination of the relationship between exposure and effects. The aim of this study was to generate and characterize aerosols composed of TiO_2 (5 nm) NP showing different agglomeration states. Two concentrations were tested: 2 and 7 mg/m^3.

Read more: Journal of Occupational and Environmental Hygiene Volume 10, Issue 2, 2013 (Available with AIHA membership)

Chemistry Resolves Toxic Concerns about Carbon Nanotubes

Safety fears about carbon nanotubes, due to their structural similarity to asbestos, have been alleviated following research showing that reducing their length removes their toxic properties.

In a new study, published in the journal *Angewandte Chemie*, evidence is provided



that the asbestos-like reactivity and pathogenicity reported for long, pristine nanotubes can be completely alleviated if their surface is modified and their effective length is reduced as a result of chemical treatment.

Read more:
http://phys.org/news/2013-01-chemistry-toxic-carbon-nanotubes.html

Regulatory Research & Industrial Hygiene Professional News

ANSI

New ANSI/ASSE Construction Emergency Procedures Standard

The ANSI A10 Committee has produced a new standard to help construction and demolition site managers prepare for emergency events such as fires, collapses, and hazardous spills. OSHA requires contractors to plan for such event before starting a job, and the new ANSI/ASSE A10-26-2011 standard, *Emergency Procedures for Construction and Demolition Sites*, will assist with that task.

Read more:
http://ohsonline.com/articles/2013/01/03/construction-emergency-procedures-standard-now-available.aspx?admgarea=news

OSHA

Construction Confined Space Final Rule on OSHA's 2013 Agenda

The biggest rulemaking action OSHA plans to accomplish this year is issuing a final rule on construction confined space safety. The general industry standard, 29 CFR 1910.146, has never been extended to construction because construction sites are unique and their hazards change, but the agency has been working on a construction rule for about a decade and intends to issue the final rule in July 2013, according to the

semiannual regulatory agenda published Jan. 8.

Read more:
http://ohsonline.com/articles/2013/01/08/construction-confined-space-final-rule.aspx?admgarea=news

Regulatory Agenda: Injury and Illness Prevention Program (I2P2)

OSHA is developing a rule requiring employers to implement an Injury and Illness Prevention Program. It involves planning, implementing, evaluating, and improving processes and activities that protect employee safety and health. OSHA has substantial data on reductions in injuries and illnesses from employers who have implemented similar effective processes. The Agency currently has voluntary Safety and Health Program Management Guidelines (54 FR 3904 to 3916), published in 1989. An injury and illness prevention program rule would build on these guidelines as well as lessons learned from successful approaches and best practices under OSHA's Voluntary Protection Program Safety and Health Achievement Recognition Program and similar industry and international initiatives such as American National Standards Institute/American Industrial Hygiene Association Z10 and Occupational Health and Safety Assessment Series 18001

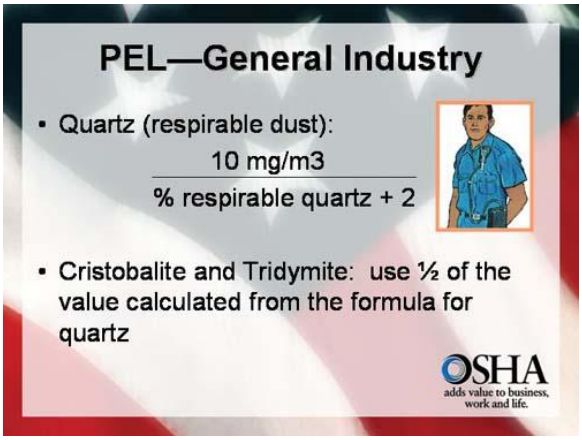
Read more:
http://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201210&RIN=1218-AC48

Regulatory Agenda: Review/Lookback of OSHA Chemical Standards

The majority of OSHA's Permissible Exposure Limits (PELs) were adopted in 1971, under section 6(a) of the OSH Act and only a few have been successfully updated since that time. There is widespread agreement among industry, labor, and

professional occupational safety and health organizations that OSHA's PELs are outdated and need revising in order to take into account newer scientific data that indicates that significant occupational health risks exist at levels below OSHA's current PELs. In 1989, OSHA issued a final standard that lowered PELS for over 200 chemicals and added PELS for 164.

However, the final rule was challenged and ultimately vacated by the 11th Circuit Court of Appeals in 1991 citing deficiencies in OSHA's analyses. Since that time OSHA has made attempts to examine its outdated PELs in light of the court's 1991 decision. Most recently, OSHA sought input through a stakeholder meeting and web forum to discuss various approaches that might be used to address its outdated PELs. As part of the Department's Regulatory Review and



Lookback Efforts, OSHA is developing a Request for Information (RFI) seeking input from the public to help the Agency identify effective ways to address occupational exposure to chemicals.

Read more:
http://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201210&RIN=1218-AC74

DOL

MSHA Raises Maximum Civil Penalty for Flagrant Violations

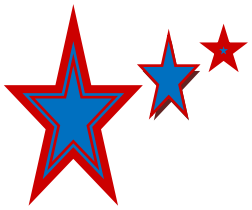
U.S. Department of Labor
MSHA
Mine Safety and Health Administration
Protecting Miners' Safety and Health Since 1978

In a final rule published Dec. 28, MSHA has raised the maximum penalty for failure to provide timely notification to the secretary under section 103(j) of the Mine Act from $60,000 to $65,000 and the maximum penalty for flagrant violations under Section 110(b)(2) of the act from $220,000 to $242,000. The changes take effect Jan. 28.

Read more:
http://ohsonline.com/articles/2012/12/31/msha-raises-maximum-civil-penalty-for-flagrant-violations.aspx?admgarea=news

USAPHC

January's DOEHRS-IH *SUPER STAR*



This month's DOEHRS-IH Super Star goes to the Industrial Hygiene Office at Fort Gordon. The IH Program has implemented an industrial hygiene process improvement (PI) initiative to eliminate duplication of shop records and improve management of re-occurring DOEHRS-IH shop(s) surveys.

The IH team has set a goal to become the most improve IH program for DOEHRS-IH data management in FY 13. They have established a Master Schedule Working Group to share lesson learned with Fort Stewart, GA and Fort Rucker, AL and later this year the working group will include the entire Southeast Regional Medical Command.

Congratulation goes to the Fort Gordon IH Program for their forward thinking and creativity.

How to become a DOEHRS-IH Super Star

- ✓ Do feel like you use DOEHRS-IH more than other program offices?
- ✓ Do you feel unnoticed?
- ✓ Do you feel like you have done great IH things with DOEHRS-IH?
- ✓ Do you wear a unitard and cape under your clothes? (Don't answer this question please)

Email the **Industrial Hygiene Training Coordinator** a brief synopsis about a new idea, a faster way, or a milestone you just met. Your Program Office just may be nominated as the monthly DOEHRS-IH ***Super Star.***

Training

This monthly summary is published by the Industrial Hygiene and Medical Safety Management Program (IHMSMP) for the U.S. Army Public Health Command.

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On the Web:
http://phc.amedd.army.mil/topics/workplacehealth/ih/Pages/default.aspx

Upcoming Courses

- ***Environmental and Indoor Air Quality***- This 4 hour Blackboard module provides CP-12 careerists with Instruction on general and technical topics related to air quality, air cleaning technology, emission source sampling, atmospheric dispersion of pollutants, air monitoring, and effects of air pollution which are valuable skills that can be incorporated directly to their job responsibilities. Register for the Environmental and Indoor Air Quality Course
- **Industrial Hygiene Work Environments: Fire Protective Services**- This 1.75 hour online course is provided using Blackboard and gives participants knowledge of the basic concepts and use of the DoD Exposure Assessment Model for the Fire Protective Services Common Process. The course also helps students recognize and record occupational health hazard data in the DOEHRS-IH data repository, and make appropriate recommendations for this similar exposure group. Register for the Industrial Hygiene Work Environments: Fire Protective Services Course.
- **Industrial Hygiene Noise Instrument Basics**- This 15 minute online course is designed to teach INTRODUCTORY LEVEL Industrial Hygiene Noise Instrument Basics. The course is recommended for early career technicians and hygienists, as well as safety and occupational health employees. Register for the Industrial Hygiene Noise Instrument Basics Course.

To view all courses visit the USAPHC portal http://phc.amedd.army.mil/Pages/Training.aspx.